Critical thinking: too little too late?

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‘Which is it?’, the student asked in frustration, ‘how are cortisol levels affected?’ Two research studies differing in their findings did not sit well with this student. I was teaching around 20 intercalated students (this is optional one year BSc done at some stage during medical school) about the epidemiology and aetiology of perinatal mental disorders. Reflecting back on my own intercalated experience, I recalled the significant shift in my thinking required from blind acceptance of ‘facts’ to the new world of research, debate and uncertainty. Now as a clinical academic (a psychiatry trainee doing research and teaching), I forget how challenging it was at that time to navigate the vast ocean of research literature, let alone critically appraise it. The ability to challenge existing dogma is the essence of critical enquiry and it drives research and optimal healthcare delivery, leading to new advances in our field. Students are encouraged to develop this skill during their intercalated BSc. Yet they are poorly prepared, as they have spent their early undergraduate years operating in a positivist paradigm of passive learning, never truly challenging the learning material. How might we ease the transition from medical student to intercalated student by ensuring that all medical students are taught to do this from an early stage of their education?

Critical thinking may be conceptualised as analysis and evaluation of information involved in reaching a reasoned conclusion. The benefits of developing such skills are well documented and include better decision making and problem solving[1].

My aim was to encourage students to consider different factors which may affect prevalence, emphasising the importance of social determinants of health. When faced with the question, ‘what may affect prevalence?’, students struggled to fathom how there could be more than one figure depending on how it was measured, among other factors.

There are a number of elements in a teaching programme that may foster critical thinking, including an open environment that encourages debate[2]. Yet as hard as I tried to foster such an ethos, my students struggled to engage, highlighting the positivist paradigm in which most medical students operate as described by Kneebone (a surgeon with extensive experience in medical education, including pioneering early surgical simulation)[3].

Why am I concerned that my students were unable to engage more with this question about prevalence? Some of them are the next generation of global health leaders. Yes, they will also be the junior doctors undertaking routine tasks but eventually they are likely to be engaging in higher level cognitive processing of a range of information sources. There are benefits to

them being prepared for this at an earlier stage of their undergraduate career than their intercalated BSc, not least because only a fraction of medical students will undertake an intercalated year. Sharples et al[4] also argue that the foundations of critical thinking are best laid in the early years of medical school. Benefits may be seen in future academic performance; measures of critical thinking have been positively correlated with postgraduate examination performance in a meta-analysis of 41 studies[5].

Eventually, my challenging and introduction of alternative explanations encouraged students to engage with the discussion. Thus there needs to be education of students in the classroom around models for critical enquiry before they can be expected to employ the skill. This need not be the reserve of an intercalated BSc and could be incorporated in to existing medical curricula by encouraging students to challenge what they are learning. However, there were a number of other activities in which I encouraged my students to engage outside of the classroom in the clinical setting, for example the lively debate in our local psychiatrists' journal club. Clinicians in particular are often in the position to influence our students outside of lectures; we can highlight the nuances and intricacies of applying one's knowledge when faced with patients: of which no two are the same. Some of my intercalated students were able to join me in outpatient clinic, where they were able to observe critical thinking in action as doctor and patient together devised a patient-centred care plan.

In conclusion, I have discussed some of my approaches to developing critical thinking in intercalated students but if we truly seek to develop critical thinking skills in all medical students, we could employ similar approaches to imbue a spirit of critical enquiry from day one of medical school. Tomorrow's doctors will grapple with a vast array of information, often conflicting and evolving every day. As clinical educators, it is our responsibility to equip them with the necessary skills of critical thinking to engage with it. Perhaps then our future doctors, operating in a modern, multicultural world of uncertainty, will better be able to consider the many differing perspectives that modern medicine brings.

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